

CLAIMS

1. A replaceable component configured to be used in an image projection system, the replaceable component including a non-volatile electronic memory configured to store information not directly related to conventional 5 operation of image projection systems.
2. The replaceable component of claim 1, wherein the non-volatile electronic memory is configured to store information identifying a source for a replacement for the replaceable component.
- 10 3. The replaceable component of claim 1, wherein the non-volatile electronic memory is configured to provide ordering information including a part number and a vendor for the replaceable component.
- 15 4. The replaceable component of claim 1, wherein the non-volatile electronic memory is configured to identify a reseller through whom the replaceable component was sold.
- 20 5. The replaceable component of claim 1, wherein at least a portion of the non-volatile electronic memory is configured to be write protected following data storage.
5. The replaceable component of claim 1, wherein the replaceable component comprises an illumination source for the image projection system,

and wherein the non-volatile electronic memory comprises a memory integrated circuit that is physically coupled to the non-volatile electronic memory.

6. The replaceable component of claim 1, wherein the non-volatile electronic memory is configured to store an operations log for the image projection system.

7. The replaceable component of claim 1, wherein the replaceable component comprises an arc lamp bulb.

10

8. The replaceable component of claim 1, wherein the replaceable component comprises an arc lamp bulb and the non-volatile electronic memory comprises a memory integrated circuit that is physically coupled to the replaceable component.

15

9. The replaceable component of claim 1, wherein the non-volatile electronic memory includes an electrically alterable memory having a first write-protectable portion configured to provide the information identifying a source of the replaceable component and a second writeable portion configured to store data during operation of the image projection system.

20
25

10. A projection system comprising:
a light engine configured to employ a replaceable component including an electronic memory device;
a controller coupled to the light engine;

a linking portion coupled to the control portion and configured for transferring information between the replaceable component and the projector system; and

5 a user interface coupled to the controller and configured to accept user input for configuring the display device, the controller being configured to store data in and/or retrieve data from the electronic memory device, the electronic memory device configured to store information not directly related to conventional operation of image projection systems.

10 11. The projection system of claim 10, wherein the replaceable component includes an arc lamp bulb, and wherein the electronic memory device comprises a memory integrated circuit that is physically coupled to the replaceable component.

15 12. The projection system of claim 10, wherein the controller is configured to write an operations log to the electronic memory device.

20 13. The projection system of claim 10, wherein the controller is configured to store data in the memory device describing signal sources employed to provide data corresponding to an image to be displayed by the projection system.

25 14. The projection system of claim 10, wherein the electronic memory device comprises an electrically alterable memory having a first write-protectable portion configured to provide the information identifying a source for the

replaceable components and a second writeable portion configured to store an operations log during operation of the image projection system.

5 15. The projection system of claim 10, wherein the replaceable component comprises an illumination source for the projection system, and wherein the electronic memory device comprises a memory integrated circuit physically coupled to the illumination source.

10 16. The projection system of claim 10, wherein the linking portion comprises only two electrical connections.

17. The projection system of claim 10, wherein the linking portion comprises an RF link.

15 18. The projection system of claim 10, wherein the projection system includes sensors configured to assess operating conditions associated with an environment in which the projection system is operated, and wherein the electronic memory device is configured to store data representing the assessed
20 operating conditions.

19. The projection system of claim 10, wherein the projection system includes sensors configured to assess operating conditions associated with an environment in which the projection system is operated including ambient

lighting conditions, and wherein the electronic memory device is configured to store data representing the assessed operating conditions.

20. The projection system of claim 10, wherein the electronic memory device is configured to provide data indicative of a sales channel for a replacement for the replaceable light source.

21. A replaceable projector component for use in an image projector system, the projector system having a control portion for controlling operation of the projector system, the replaceable component including a memory integrated circuit including a first write-protectable portion configured to store information prior to installation of the replaceable component in the projector system and to write protect the information after installation of the replaceable component in the projector system and a second writeable portion configured to store data during operation of the projector system.

22. The replaceable projector component of claim 21, wherein the memory integrated circuit is configured to provide at least a portion of the information identifying a reseller of replacements for the replaceable projector component.

23. The replaceable projector component of claim 21, wherein the memory integrated circuit is configured to provide at least a portion of the information identifying a part number for the replaceable component.

24. The replaceable projector component of claim 21, wherein the replaceable projector component includes an illumination source for the projector system.

5 25. The replaceable projector component of claim 21, wherein the replaceable projector component includes an illumination source for the projector system and the memory integrated circuit is physically attached to the illumination source.

10 26. The replaceable projector component of claim 21, wherein the replaceable projector component includes a high intensity light source and the memory integrated circuit is physically coupled to the high intensity light source.

15 27. The replaceable projector component of claim 21, wherein the replaceable projector component includes an arc lamp bulb and the memory integrated circuit is attached to the arc lamp bulb.

20 28. The replaceable projector component of claim 21, wherein the projector system includes one or more sensors configured to measure aspects of an environment in which the projector system operates and wherein the control portion is configured to write data corresponding to sensor output data in the memory integrated circuit.

25 29. The replaceable projector component of claim 21, wherein the projector system includes one or more sensors configured to measure aspects of

an environment in which the projector system operates including ambient lighting conditions and wherein the control portion is configured to write data corresponding to sensor output data in the memory integrated circuit.

5 30. A method of forming a replaceable component for a digital image projection system comprising physically attaching an electronic memory device to the replaceable component, wherein the replaceable component comprises a high intensity illumination source, and wherein the electronic memory device is a non-volatile memory configured to store data during operation of the digital
10 image projection system.

31. The method of claim 30, further comprising writing information to a write-protectable portion of the electronic memory device.

15 32. The method of claim 30, further comprising writing information to a write-protectable portion of the electronic memory device and then write protecting the write-protectable portion.

20 33. The method of claim 30, further comprising writing information to a write-protectable portion of the electronic memory device, the information corresponding to a part number for the replaceable component and corresponding to a vendor that sells replaceable components configured to replace the replaceable component.

34. The method of claim 30, wherein physically attaching comprises physically attaching a memory integrated circuit comprising the electronic memory device to an arc lamp comprising the high intensity light source.

5 35. A method for recording information in a non-volatile memory device associated with a replaceable component for a digital image projection system comprising:

coupling a processor to the memory device;
writing the information to the memory device;
10 decoupling the processor from the memory device; and
shipping the replaceable component to a user of the replaceable component.

15 36. The method of claim 35, wherein writing information to the memory device comprises writing information permitting identification of a reseller of replacements for the replaceable component.

20 37. The method of claim 35, wherein writing information comprises writing information permitting identification of a vendor of the replaceable component.

38. The method of claim 35, wherein writing information comprises writing information configured to facilitate ordering a replacement for the replaceable component.

39. The method of claim 35, wherein writing information comprises writing information describing the replaceable component in a write-protectable portion of the memory device and then write-protecting the portion.

5 40. The method of claim 35, wherein writing information comprises writing information permitting identification of a vendor of the replaceable component in a write-protectable portion of the memory device and then write-protecting the portion.

10 41. A digital image projection system comprising:
replaceable component means useful in the projection system and
including memory means;
exchange means for exchanging data with the memory means;
means for spatial light modulation;
15 illumination means for illuminating the spatial light modulation means;
signal means for providing signals corresponding to images to be
displayed to the means for spatial light modulation, the signal means being
coupled to the means for spatial light modulation;
control means coupled to the signal means, the means for spatial
20 modulation and the exchange means, the control means being configured to:
co-ordinate operation of the means for spatial light modulation and the
signal means to facilitate conventional projector operation; and
store information not directly related to conventional operation of image
projection systems in the memory means via the exchange means.

42. The system of claim 41, wherein the replaceable component means comprises the illumination means and includes a high intensity illumination source coupled with a memory integrated circuit.

5 43. The system of claim 41, wherein the replaceable component means comprises the illumination means and includes an assemblage of an arc lamp bulb and a memory integrated circuit.

44. The system of claim 41, wherein the replaceable component 10 means comprises the illumination means and includes a high intensity illumination source and a memory integrated circuit having a write-protectable portion.

CLAIMS

1. A replaceable component (125) configured to be used in an image projection system (100), the replaceable component (125) including a non-volatile electronic memory (130) configured to store information not directly related to conventional operation of image projection systems (100).

5
2. The replaceable component (125) of claim 1, wherein the non-volatile electronic memory (130) is configured to store information identifying a source for a replacement for the replaceable component (125).

10

3. The replaceable component (125) of claim 1, wherein the non-volatile electronic memory (130) is configured to provide ordering information including a part number and a vendor for the replaceable component (125).

15

4. The replaceable component (125) of claim 1, wherein the non-volatile electronic memory (130) is configured to identify a reseller through whom the replaceable component (125) was sold.

16015 U.S. PTO
10/603,396
06/24/03


5. The replaceable component (125) of claim 1, wherein at least a portion of the non-volatile electronic memory (130) is configured to be write protected following data storage.

5 6. The replaceable component (125) of claim 1, wherein the replaceable component (125) comprises an illumination source (125) for the image projection system (100), and wherein the non-volatile electronic memory (130) comprises a memory integrated circuit (130) that is physically coupled to the non-volatile electronic memory (130).

10 7. The replaceable component (125) of claim 1, wherein the non-volatile electronic memory (130) is configured to store an operations log for the image projection system (100).

15 8. The replaceable component (125) of claim 1, wherein the replaceable component (125) comprises an arc lamp bulb (125).

9. The replaceable component (125) of claim 1, wherein the replaceable component (125) comprises an arc lamp bulb (125) and the non-

volatile electronic memory (130) comprises a memory integrated circuit (130) that is physically coupled to the replaceable component (125).

10. The replaceable component (125) of claim 1, wherein the non-volatile electronic memory (130) includes an electrically alterable memory (130) having a first write-protectable portion configured to provide the information identifying a source of the replaceable component (125) and a second writeable portion configured to store data during operation of the image projection system (100).

10